

REMARKS

After entry of the foregoing amendment, claims 52-80 remain pending in the application. (Claims 75-80 are withdrawn from consideration.)

The claims are unchanged. They are presented above simply for convenience of reference.

The Office is thanked for the Examiner's detailed consideration of the application. Nonetheless, applicant respectfully maintains his traverse of the rejections, e.g., as explained below.

(The Office Action Summary indicates that claims 75-80 have been withdrawn from consideration. However, no explanation is provided. Applicant presumes that the same reasoning offered in the January 2007 Action was intended. If this is not the case, kindly clarify.)

On page 10 of the Action the Examiner states that a person of ordinary skill is someone having at least an MS in Computer/Electrical Engineering and is familiar with steganographic techniques (or someone with equivalent industry experience).

The Examiner is requested to provide a factual foundation for this statement – particularly the assertion that an MS degree is required for a person of “ordinary skill” – so that applicant can properly assess same.

By point of reference, the present inventor does not have an MS degree. Nor does he have a degree in computer/electrical engineering. Rather, he has a BA degree in physics. To evidence such facts, excerpts from a 1999 prospectus filed with the SEC by assignee Digimarc Corporation are attached.

(To establish the level of “ordinary skill,” MPEP § 2141.03 identifies “the educational level of the inventor” as the first factor to be considered.)

Claims 52-65 and 70-73 stand rejected as unpatentable over Reeds (5,203,902) in view of Hopper (3,406,344). The remaining claims stand rejected over Reeds and Hopper, and further in view of Lee (5,687,191) and Jones (3,586,781). (The withdrawal of the earlier § 112 rejection is noted with appreciation.)

In the last Amendment, applicant explained that the Office's earlier-offered motivation to combine Reed and Hopper was illusory. In the present Action the Office agreed, and withdrew that motivation. A different rationale is now offered.

In particular, the Office now proposes *"to modify Reed's invention using Hopper's teachings such that rather than use the digital signature in a challenge-response authentication protocol, one instead used steganography to redundantly encode the user's voice signal by hiding an auxiliary identification signal (i.e., the digital signature from Reed's invention) in the voice signal before transmission. The rationale for why it would have been obvious is that combining the prior art elements from Reeds and Hopper's invention would do no more than yield the predictable result of a cell phone system which authenticates a cell phone to a base station via use of a steganographically encoded digital signature."*¹

Applicant respectfully submits that this rationale is also unavailing.

As reviewed earlier, Reeds' Background discussion explains that various authentication arrangements are known, e.g., using private keys and public/private key pairs, and that same have been used to validate a cell phone transaction at the time a call is made. However, Reeds explains that such arrangements are unsatisfactory because the back-and-forth protocols associated with key exchange and verification are too slow for consumer acceptance. Waiting seconds to get a dial tone is generally intolerable (*c.f.*, col. 2, lines 8-15).

¹ Page 12, only full paragraph.

Reeds' invention addressed this authentication delay problem by conducting authentication infrequently, i.e., only when a handset first enters a local base station's coverage area (*c.f.*, col. 3, lines 31-36). Much of the back-and-forth of prior art techniques at call set-up is thus obviated.

The substitution of voice steganography – as proposed by the Action – doesn't work in Reeds. Steganography isn't useful *until after* a call has been set-up and is underway. It does not permit authentication of a handset as it enters a base station's coverage area, as contemplated by Reeds. (Nor does it permit authentication of a handset at the time of call origination, as also contemplated by Reeds at 3:37-39.)

Steganography of the voice signal is possible *only after* a visiting cell phone has been registered with a local base station (and *only after* a call has been originated).

Reeds' registration process cited in the Action (col. 7, lines 21-34) cannot work with voice steganography, because there is no voice to encode.

Thus, applicant respectfully submits that an artisan would not modify Reeds in the manner asserted.

Regarding claim 62, Applicant submits that the “dynamics” limitation has been mis-interpreted so as to render it superfluous.

The Office contends that Hopper meets the claim limitation because “*the auxiliary signal only is supplied when voice data is active/dynamic.*”² Such a construction, however, would likewise read on the following, edited, claim language:

“...an encoding signal that depends – in part – on **dynamics of** the data...”

That is, if the questioned limitation were omitted, Hopper's arrangement would still apply, and for the same reason. Thus, the Office is construing the limitation in a way that gives “dynamics” no meaning. The Board will not affirm such reading of the claim.

² Page 7, second full paragraph.

Moreover, the criteria by which Hopper decides whether to encode is not “active/dynamic,” as stated in the Action. Such terms do not seem to appear in Hopper’s patent. Rather, Hopper’s encoding criteria is the energy magnitude of the speech (col. 4, lines 51-52). That is, Hopper encodes when the speech is present and when the magnitude of the speech energy exceeds a threshold.

The presence of speech is different than its dynamics. So is testing whether a threshold energy magnitude has been met. Hopper does not teach an encoding signal that depends “on dynamics of” the data.

Finally, while the Office argues that the claim language is broader than the specification, no attention seems to have been paid to the principle that it is the specification that gives meaning to the claim terms. The Office’s view that the mere presence of voice data of a sufficient magnitude, as in Hopper, anticipates “dynamics” of the data, ignores the most important evidence of the term’s meaning: the specification.

Reconsideration is thus requested.

Regarding independent claims 65 and 66, applicant would be willing to cancel the claims (and their dependents) from this application - and continue prosecution of same in a new application - if the present application were otherwise allowable. Otherwise, merits of these claims will be left to the Board.

Independent claim 69 has been rejected by reference to claims 55 and 66. However, neither claim 55 nor 66 has any limitation comparable to the “dynamics” limitation of claim 69. Accordingly, *prima facie* obviousness has not been made out. (Moreover, Hopper does not teach the “dynamics” limitation, as detailed above in connection with claim 62.)

To avoid lengthening this response unnecessarily, applicant does not repeat the traverses that were earlier-presented, and with which the Examiner disagreed. Those issues can be referred to the Board, if necessary.

For brevity's sake, these remarks have only addressed certain of the claims, and have detailed only certain of the distinctions between the claims and the art. However, such discussion is believed sufficient to establish the allowability of all pending claims. Thus, applicant does not further belabor this paper with other arguments concerning the rejections, the art, and the claims – all of which are also reserved for possible presentation to the Board.

Favorable action is solicited.

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Respectfully submitted,

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